

Perception of Drivers and Barriers in the Adoption of Cargo Cycles by Private and Public Organizations in Germany: Insights into Europe's Largest Cargo Cycle Testing Scheme

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APPROACH

Installation of Europe's largest cargo cycle testing scheme for stimulation and research

- Fleet: 150 cargo cycles, 23 different models available Germany-wide
- Offering: 800+ slots for 3-months-testing-periods until end of 2019
- Target group: private and public organizations of all industries
- Targeted stage of adoption: "interested, but hesitant"
- Objective: understanding the gap between potential and actual use
- Data acquisition: surveys, smartphone app and GPS trackers



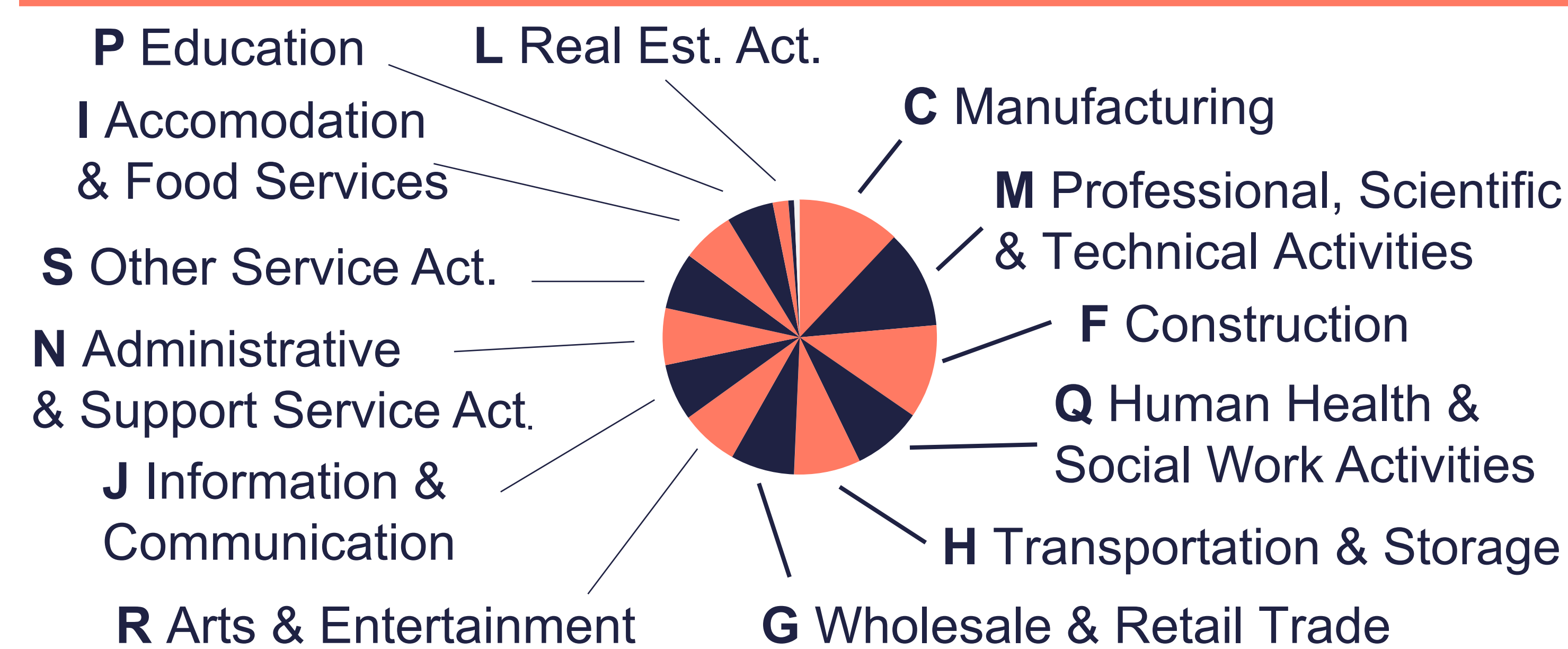
Figure 1: Selection of available project vehicles (photo: DLR)

SAMPLE DESCRIPTIVE STATISTICS (n=701)

Organizations of all types, sizes, and business sectors applied for testing cargo cycles during first year

Type of organization	Sample	Turnover	Sample	Germany
Self-employed, freelance	51.1%	0-2 M€	88.0%	80.9%
Private company	19.7%	2-10 M€	5.8%	15.5%
Public institution	14.0%	10-50 M€	2.9%	2.9%
NGO or association	9.6%	50+ M€	3.4%	0.7%
Other	5.7%			

Business sectors (WZ 2008)



FLEET DECISION-MAKING

At this stage, mostly organizations with autocratic fleet decision-making seem favorable for cargo cycle adoption

		Formalization	
		High	Low
Centralization	High	Hierarchic 15.3%	Autocratic 75.2%
	Low	Bureaucratic 5.9%	Democratic 3.7%

Typology based on Nesbitt & Sperling 2001

RANKING OF ORGANIZATIONAL MOTIVATIONS

Interest in cargo cycles is mostly sparked by ecological considerations, economic motivations are secondary

	Degree of agreement (5-point Likert scale)
1. Environmental Protection	4.70
2. Being a role model	4.50
3. Expectation to act sustainably	3.86
4. Economic potential	3.76
5. Alternatives for driving bans	2.61

RANKING OF DRIVERS

Applicants see greatest advantages in operations (parking, range) and soft issues (image, health)

	Degree of agreement (5-point Likert scale)
1. Flexible parking and (un)loading	4.40
2. Promote company image	4.35
3. Sufficient electric range	4.32
4. Promote health of drivers	4.27
5. Cheaper than cars	4.17
6. Lower maintenance cost	4.14
7. Fun for employees	4.07
8. Reach corporate environmental goals	4.06
9. Reach access-restricted areas	3.98
10. Reliable journey time	3.87
11. Faster than car	3.54

RANKING OF BARRIERS

Applicants are most skeptical about weather restrictions, implementation costs and bicycle infrastructure

	Degree of agreement (5-point Likert scale)
1. Bad weather restricts usability	2.87
2. Costly implementation	2.63
3. Bad cycle infrastructure	2.61
4. Risk of theft	2.37
5. Insufficient payload	2.23
6. Vulnerability in traffic	2.13
7. Lack of service network	2.08
8. Can't cover business area	1.94
9. Complicated implementation	1.85
10. Lack of acceptance among employees	1.70
11. Using cargo cycles is dangerous	1.68
12. Risk of damaging goods	1.64

CONCLUSION AND OUTLOOK

The testing scheme will continue until end of 2019, combining campaign and research agenda

Widespread interest in cargo cycles is noticeable, *but*:

- How will testing impact the perception of drivers and barriers?
- Will testing lead to a real implementation of cargo cycles among private and public organizations in Germany?
- What substitution potential can actually be lifted by cargo cycles?

→ Stay tuned, our analyses will show!

References and Annotations

- Nesbitt, Kevin, and Daniel Sperling. "Fleet purchase behavior: decision processes and implications for new vehicle technologies and fuels." Transportation Research Part C: Emerging Technologies 9.5 (2001): 297-318.
- WZ 2008: German Classification of Economic Activities, Edition 2008 by the Federal Statistical Office Germany
- Project title: *Ich entlaste Städte* ("Taking the load off cities"), project website: www.lastenradtest.de

